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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,487	09/02/2004	Kazuhisa Senda	121036-0070	2843
7590 Michael S Gzybowski Butzel Long Suite 300 350 South Main Street Ann Arbor, MI 48104			EXAMINER OHERN, BRENT T	
			ART UNIT 1794	PAPER NUMBER
			MAIL DATE 02/19/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/506,487

**Applicant(s)**

SENDA ET AL.

**Examiner**

BRENT T. OHERN

**Art Unit**

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. In view of the appeal brief filed on 20 December 2007, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

/Terrel Morris/  
Terrel Morris  
Supervisory Patent Examiner  
Group Art Unit 1794

2. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

**Claims**

3. Claims 1-15 are pending.

### **WITHDRAWN REJECTIONS**

4. The 35 USC 103(a) rejections of claims 1-3, 5-6, 8-9 and 14-15 as being unpatentable over Farnam (US 4,463,704) in view of Kusakabe et al. (US 5,986,014) of record in the Office Action mailed 17 April 2007, page 3, paragraph 7, have been withdrawn due to Applicant's amendments in the Paper filed 20 December 2007.
5. The 35 USC 103(a) rejections of claims 4 and 10 as being unpatentable over Farnam (US 4,463,704) in view of Kusakabe et al. (US 5,986,014) and DeCato et al. (US 6,444,740) of record in the Office Action mailed 17 April 2007, page 6, paragraph 8, have been withdrawn due to Applicant's amendments in the Paper filed 20 December 2007.
6. The 35 USC 103(a) rejections of claims 7 and 11-13 as being unpatentable over Farnam (US 4,463,704) in view of Kusakabe et al. (US 5,986,014), DeCato et al. (6,444,740) and Kawamura (US 5,684,110) of record in the Office Action mailed 17 April 2007, page 6, paragraph 9, have been withdrawn due to Applicant's amendments in the Paper filed 20 December 2007.

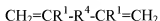
### **NEW REJECTIONS**

#### ***Claim Rejections - 35 USC § 112***

7. Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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8. The phrase “a cured product layer of a composition comprising: capable of undergoing hydrosilylation reaction by copolymerization of an acrylic acid ester monomer and a compound as a second monomer represented by the general formula:



wherein  $\text{R}^1$  is a hydrogen atom or a methyl group and  $\text{R}^4$  is an alkylene group of  $\text{C}_2\text{-C}_6$

(B) a hydrosilyl group-containing compound; and

(C) a hydrosilylation catalyst as essential components” in claim 1, lines 1-10 is vague and indefinite since it is unclear how it is possible for a “cured product layer” to comprise the various compounds A-C since the compounds lose their character upon curing. Furthermore, the “capable of” language in line 3 does not require any particular reactants to be present or any particular cured product composition to be formed.

9. The phrase “wherein the second monomer is one of 1,5-hexadiene, 1,7-octadiene and 1,9-decadiene” in claim 14, lines 1-2 is vague and indefinite since it is unclear how it is possible for the second monomer of independent claim #1 which is required to have at least three double bonds to be a diene, with two double bonds, per claim #14.

Clarification and/or correction is required.

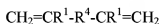
#### ***Claim Rejections - 35 USC § 103***

10. Claims 1-3, 5-6, 8-9 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farnam (US 4,463,704) in view of Kusakabe et al. (US 5,986,014) and Taylor et al. (US 4,008,190).

Regarding claims 1 and 14-15, Farnam ('704) teaches a gasket (*See Abstract, l. 2.*), which comprises a cured product layer (*See Abs., l. 17 “cure the coating”.*) and a metal plate or resin

plate (*See col. 3, l. 26 "polymeric material", a resin.*), the cured product layer being provided on at least one surface of the resin plate (*See col. 8, ll. 46-48 "applied to top and bottom surfaces" and Abs., ll. 4-5 and 17.*), however, fails to expressly disclose a composition comprising an acrylic polymer having at least one alkenyl group capable of undergoing hydrosilylation reaction by copolymerization of an acrylic acid ester monomer and a compound as a second monomer represented by the general formula:  $\text{CH}_2=\text{CR}^1-\text{R}^4-\text{CR}^1=\text{CH}_2$  wherein  $\text{R}^1$  is a hydrogen atom or a methyl group and  $\text{R}^4$  is an alkylene group of  $\text{C}_2\text{-C}_6$ ; or wherein the second monomer is one of 1,5-hexadiene, 1,7-octadiene and 1,9-decadiene, a hydrosilyl group-containing compound; and a hydrosilylation catalyst as essential components.

However, Kusakabe ('014) teaches gaskets made from a composition comprising an acrylic polymer having at least one alkenyl group capable of undergoing hydrosilylation reaction (*See col. 11, ll. 43-45 and col. 14, l. 63.*), by copolymerization of an acrylic acid ester monomer and a compound as a second monomer represented by the general formula:



wherein  $\text{R}^1$  is a hydrogen atom or a methyl group,  $\text{R}^4$  is a group of  $\text{C}_1\text{-C}_{20}$  (*See col. 12, ll. 56-60 wherein 1,5-hexadiene, 1,7-octadiene and 1,9-decadiene satisfy the above formula with  $\text{R}^4$  having 2, 4 or 6 carbons respectively. See also col. 5, l. 59 to col. 6, l. 33 wherein Applicant's left  $\text{R}^1$  is equivalent to Kusakabe's  $\text{R}^3$  and right  $\text{R}^1$  which is equivalent to Kusakabe's  $\text{R}^6$  which is a hydrogen or methyl group and explained in col. 5, ll. 63-67 and wherein Applicant's  $\text{R}^4$  is equivalent to Kusakabe's  $\text{R}^4$  and  $\text{R}^5$ .);*

a hydrosilyl group-containing compound (*See col. 11, l. 46.*) and a hydrosilylation catalyst as essential components (*See col. 14, ll. 49-50.*) for the purpose of providing a gasket having good depth curability without foaming (*See col. 14, ll. 47-64.*).

Furthermore, Taylor ('190) teaches automobile gaskets made from compounds such as  $\text{CH}_2=\text{CR}^1-\text{R}^4-\text{CR}^1=\text{CH}_2$  wherein  $\text{R}^1$  is a hydrogen atom or a methyl group,  $\text{R}^4$  is an alkylene group of  $\text{C}_2\text{-C}_6$ , such as 1,4,9-decatriene or dienes such as 1,5-hexadiene and 1,4-pentadiene (*See col. 2, ll. 41-52.*) for the purpose of providing automobile gaskets that are oil, chemical and heat resistant (*See col. 7, ll. 27-32.*).

Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicants' invention was made to substitute the composition of Farnam ('704) with the well known acrylic polymers as taught by Kusakabe ('014) and Taylor ('190) in order to provide gaskets having oil, chemical and heat resistant with good depth curability without foaming.

Furthermore, Taylor ('190) teaches alternative uses of the specified trienes and dienes, therefore, it would have been obvious to substitute the trienes of Taylor ('190) for the dienes of Kusakabe ('014) in order to provide gaskets having oil, chemical and heat resistance.

The phrase "wherein the second monomer reacts at a final stage of the polymerization reaction or after completion of the reaction of the acrylic acid ester monomer in the synthesis of acrylic polymers by living radical polymerization" in claim 15, ll. 1-4 are **process limitations** in a product claim and hence not given any patentable weight since patentability of a product does not depend on its method of production (*see MPEP § 2173.05(p)*).

Regarding claim 2, Farnam ('704) and Taylor ('190) teach the gasket discussed above, however, fail to expressly disclose a gasket wherein the component of the composition is a liquid

acrylic polymer having a number average molecular weight  $M_n$  of 500 or more and a molecular weight distribution ( $M_w/M_n$ ) of 1.8 or less.

However, Kusakabe ('014) teaches a gasket wherein the component of the composition is a liquid acrylic polymer having a number average molecular weight  $M_n$  of 500 or more (*See col. 11, ll. 49-50 wherein the  $M_w$  is from 500 to 50,000 and col. 3 ll. 64-65 wherein  $M_w/M_n = 1.1 - 1.5$ , thus making  $M_n$  from 333 to 45,455.*) and a molecular weight distribution ( $M_w/M_n$ ) of 1.8 or less (*See col. 3, ll. 64-65.*) for the purpose of providing sufficient physical properties and is not too viscous (*See col. 11, ll. 52-57.*).

Therefore it would have been obvious to one having ordinary skill in the art at the time applicants' invention was made to substitute Farnam ('704) with the well known acrylic polymer with  $M_n$  and  $M_w/M_n$  as taught by Kusakabe ('014) in order to provide a polymer that has sufficient physical properties and not too viscous.

Regarding claim 3, Farnam ('704) teach a gasket wherein the cured product layer has a film thickness of 1-500  $\mu\text{m}$  (*See col. 3, ll. 44-47 "any desired thickness" and col. 9, ll. 18-21, 0.0005 - 0.005 in. which equals 12.7 - 127  $\mu\text{m}$ .*).

Regarding claim 5, Farnam ('704) teaches a gasket wherein the composition is directly applied to an adhesive-coated metal plate or resin plate (*See col. 8, ll. 46-48 "adhesive coatings" and "applied to the top and bottom surfaces of the gasket part" and Abs., ll. 4-5 "coated with a liquid dispersion of polymer or polymers".*) and cured (*See Abs., l. 17, "cure the coating".*).

Regarding claims 6, 8 and 9, Farnam ('704) teaches a gasket is an engine oil pan gasket (*See col. 1, ll. 30-35 "pan gasket".*).



11. Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farnam (US 4,463,704) in view of Kusakabe et al. (US 5,986,014), Taylor et al. (US 4,008,190) and DeCato et al. (US 6,444,740).

Regarding claim 4, Farnam ('704), Kusakabe ('014) and Taylor ('190) teach the gasket as described above, however, fail to expressly disclose a gasket wherein the cured product layer has a surface hardness of 45 or less. However, DeCato ('740) teaches the cured product layer's properties and characteristics, such surface hardness, can vary depending on the additives (*See col. 5, ll. 46-51.*). Furthermore, DeCato ('740) teaches a surface hardness of 45 or less (*See col. 15, Table 7a, "Comp. 5".*).

Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicants' invention was made to provide the above surface since DeCato ('740) teaches that silicone compositions include plasticizers when it is desirable for the specific surface hardness of the cured product layer. Furthermore, DeCato ('740) teaches the surface hardness of the cured product layer of 45 or less.

Regarding claim 10, Farnam ('704) teaches an engine oil pan gasket (*See col. 1, ll. 30-35 "pan gasket".*).

12. Claims 7 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farnam (US 4,463,704) in view of Kusakabe et al. (US 5,986,014), Taylor et al. (US 4,008,190), DeCato et al. (6,444,740) and Kawamura (US 5,684,110).

Farnam ('704), Kusakabe ('014), Taylor ('190) and DeCato ('740) teach the gasket as described above, however, fail to expressly disclose a gasket wherein the cured product is provided on a resin plate that has a softening point of 100 °C or more.

However, Kawamura ('110) teaches resins that have a softening point of 100 °C or more (*See col. 6, ll. 52-55 "softening point from 5 °C to 200 °C"*.) for the purpose of providing a gasket to undergo a very slow cure (*See col. 6, ll. 3-4.*) for having acceptable storage stability (*See col. 6, ll. 41-42.*).

Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicants' invention was made to provide a resin plate of Farnam ('704) with a softening point of 100 °C or more as taught by Kawamura ('110) in order to provide a gasket having acceptable storage stability as described above.

#### ANSWERS TO APPLICANT'S ARGUMENTS

13. In response to Applicant's arguments (*See pp. 4-12, of Applicant's Paper filed 20 December 2007.*) requesting withdrawal of the rejections, it is noted that Applicant's arguments are persuasive and all rejections have been withdrawn. The Examiner's interpretation of the claims and the teachings of the claims is discussed above.

14. In response to Applicant's arguments (*See p. 11, paras. 1-4 of Applicant's Paper filed 20 December 2007.*) that DeCato ('740) does not teach the surface hardness, it is noted that DeCato ('740) teaches wherein the physical properties and characteristics can be provided for by varying the additives (*See col. 5, ll. 46-51 and col. 15, Table 7a, "Comp. 5"*).

15. In response to Applicant's arguments (*See p. 12, paras. 1-5 of Applicant's Paper filed 20 December 2007*) that it is unclear how Kawamura's ('110) softening point of 5 °C to 200 °C can include a softening point of 100 °C or more, it is noted that 100 °C is within the above range (*See col. 6, ll. 52-55.*) for the purpose of providing a gasket to undergo a very slow cure (*See col. 6, ll. 3-4.*) providing acceptable storage stability (*See col. 6, ll. 41-42.*).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRENT T. OHERN whose telephone number is (571)272-0496. The examiner can normally be reached on Monday, Tuesday and Thursday, 9:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brent T O'Hern/  
Examiner, Art Unit 1794  
February 14, 2008.

/Nasser Ahmad/  
Primary Examiner, Art Unit 1794  
February 14, 2008.